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Attachment No. 2

**INITIAL STATEMENT OF REASONS****CALIFORNIA CODE OF REGULATIONS**

TITLE 8: Division 1, Chapter 4, Subchapter 7, Article 154,  
Sections 6070, 6074, 6075, 6080, 6085, 6087, 6089, 6090, 6100, 6115 and 6120,  
and Article 154, Appendices A and B of the General Industry Safety Orders

**Pressurized Worksite Operations****SUMMARY**

This rulemaking was initiated in response to a request from the Mining and Tunneling Unit of the Division of Occupational Safety and Health (Division) to update the decompression tables in Article 154 (OSHA decompression tables) which apply to tunneling operations where work is performed in a compressed air environment. An unacceptably high incidence of decompression sickness has been reported where the OSHA decompression tables were used on compressed air tunneling projects. The industry has discontinued the use of the OSHA decompression tables in favor of more up-to-date decompression tables which employ the use of oxygen breathing gas during decompression. The use of these newer tables has greatly reduced the incidence of decompression sickness.

**SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION****Section 6070. Application.**

Section 6070 provides guidance on the application of the standards in Article 154, Pressurized Worksite Operations. The proposal would add the word "environment" to indicate that Article 154 applies to work in a "compressed air environment." That term is defined in Section 6074. This proposed revision is necessary to improve clarity.

**Section 6074. Definitions.**

Section 6074 provides definitions of terms used in Article 154. The proposal would delete the definition of "Normal Condition" because that term is proposed to be deleted from Section 6085 and would no longer appear in Article 154. Proposed Section 6085 would replace the reference

to the decompression table for normal conditions in Appendix A with a reference to the decompression tables in Chapter 9 of the U.S. Navy Diving Manual – Revision 6 which would be incorporated by reference. This proposed revision is necessary to be consistent with the use of the decompression tables incorporated by reference in proposed Section 6085.

A new definition of “Supervising Physician” is proposed to be added. The text of the definition is substantively the same as the text that is proposed to be deleted from Section 6120(a)(1). That text and the terms “retained physician” and “appointed physician” which are used in Article 154 would be replaced with “supervising physician.” This proposed revision is necessary to improve clarity and consistency.

#### **Section 6075. General Provisions.**

New Section 6075(c) would require that employees who are exposed to or control the exposure of others to hyperbaric conditions shall be trained in hyperbaric related physics and physiology, recognition of pressure related injuries, and how to avoid discomfort during compression. The advisory committee convened to consider amendments to Article 154 recommended that training requirements be added to require employees be provided information on the cause, signs and symptoms of decompression sickness. This training is necessary because some employees may have no prior experience working in compressed air environments and are unfamiliar with the hazards. When employees understand the purpose and importance of detailed decompression procedures, they are more likely to follow the procedures. Employees must also be able to recognize the signs and symptoms of decompression sickness so that appropriate treatment can be provided. Training on how to avoid discomfort during decompression prevents discomfort such as middle ear pain which could lead to injury if pressure in the middle ear is not correctly equalized with the outside pressure. This proposed revision is necessary to be at least as effective as the training requirements in CFR 1926.803(e)(1) of the counterpart federal standard.

#### **Section 6080. Compression Rate.**

The proposal would delete the word “Rate” from the section title because subsection (b) of this section pertains to the maximum pressure and not the compression rate. This proposed revision is necessary to improve clarity.

Section 6080(b) prohibits subjecting an employee to pressure exceeding 50 pounds per square inch (psi) except in an emergency. The proposal would add an exception to the prohibition which would allow work in pressure exceeding 50 psi when approved by the Division. This proposed exception is necessary because some tunneling operations are performed at depths that require employees to work in pressure greater than 50 psi.

The proposal would also add a note to Section 6080(b) that would refer the reader to the exception to Section 6085 which provides that decompression tables used for pressure exceeding 50 psi may be used if recommended by the supervising physician and approved by the Division for use at the worksite. This proposed note is necessary to refer the reader to additional requirements related to work at pressure exceeding 50 psi.

The proposal would add an exception which would exempt employers from the requirements of subsections (a) and (b) in an emergency. This proposed exemption is necessary because emergencies such as decompression illness or an unplanned rapid decompression may require an employee to be immediately re-compressed at a rate or pressure which exceeds that specified in subsections (a) and (b).

#### **Section 6085. Decompression for Normal Conditions.**

The proposal would re-title the section “Decompression of Employees”. This proposed revision is necessary because the proposal would broaden the scope of the section to address a variety of conditions other than “normal conditions”, such as repetitive exposure conditions, work at altitude, and ascent to altitude after decompression.

Section 6085 requires that decompression for normal conditions shall be in accordance with the decompression tables in Appendix A. Section 6085 would be renumbered to Section 6085(a). New Section 6085(a) would be amended to replace the reference to the tables in Appendix A with a reference to the decompression tables in Volume 2, Chapter 9 of the U.S. Navy Diving Manual – Revision 6 which would be incorporated by reference. Section 6085(a) would require that decompression be in accordance with the decompression tables specified in subsections (a)(1) to (a)(6). Proposed Exception No. 1 would allow employees to be decompressed in an emergency according to the supervising physician’s recommended decompression procedures. Proposed Exception No. 2 would allow the use of alternative decompression tables when recommended by the supervising physician and approved by the Division. The dive tables in subsections (a)(1) to (a)(6) would specify which of the tables in the referenced Chapter 9 are to be used based on the conditions surrounding an employee’s exposure to a compressed air environment. The proposal would delete Appendix A and, in effect, replace the dive tables in Appendix A with the decompression table referenced in proposed subsection (a)(2). This proposal is necessary because the current decompression tables are outdated and do not provide adequate protection for employees from decompression sickness.

As the air pressure in a work environment continues to increase above normal atmospheric pressure, the bloodstream transports nitrogen from the lungs to the tissues where it is absorbed. The total amount of nitrogen absorbed in the tissues will be greater the higher the pressure and the longer the exposure time, until the tissue becomes saturated. As the pressure returns to normal (decompression), nitrogen is transported from the tissues to the lung. The decompression rate must be carefully controlled to prevent nitrogen bubbles forming in the tissues and blood, causing decompression sickness. Years of scientific study, calculations, animal and human experimentation, and extensive field experience all contribute to the development of decompression tables to reduce the risk of decompression sickness. A staged decompression table requires decompression stops at specified pressures for specified lengths of time. The number of stops, the pressure at the stop, and stop time are determined by the length of time that an employee spends in a compressed air environment and the pressure of the environment.

The standards concerning compressed air environments were originally developed in 1933 and the decompression tables in Appendices A and B have not been amended since at least 1955. The counterpart federal standard to Article 154 is 29 CFR 1926.803. The decompression tables

for normal conditions in Appendix A of Article 154 and in Appendix A of 29 CFR 1926.803 are substantively the same. These tables are commonly referred to as the OSHA decompression tables. The federal standards do not include decompression tables for other than normal conditions, such as the tables for repetitive exposure conditions in Appendix B of Article 154.

The following is an excerpt from an article published by Dr. Eric Kindwall, who is widely recognized as an authority on decompression procedures for work in compressed air environments:<sup>1</sup>

*Multinational experience over many years indicates that all current air decompression schedules for caisson and compressed air tunnel workers are inadequate. All of them, including the OSHA tables, produce dysbaric osteonecrosis<sup>2</sup>. The problem is compounded because decompression sickness (DCS) tends to be underreported. Permanent damage in the form of central nervous system or brain damage may occur in compressed air tunnel workers, as seen on magnetic resonance imaging, in addition to dysbaric osteonecrosis. Oxygen decompression seems to be the only viable method for safely decompressing tunnel workers. Oxygen decompression of tunnel workers has been successfully used in Germany, France, and Brazil.*

Revision 6 of the U.S. Navy Diving Manual was published on April 15, 2008. The decompression procedures in Chapter 9 of the manual replace the air decompression procedures that have been in use by the Navy for more than fifty years. These new procedures are considered safer and more flexible than the older procedures, primarily because oxygen is used during decompression to accelerate elimination of excess nitrogen from the body. The advisory committee, which was convened to consider updating the decompression tables in Article 154, considered several recently developed decompression tables that use oxygen during decompression. The committee unanimously recommended replacing the current OSHA tables with the new decompression tables in Revision 6 of the U.S. Navy Diving Manual.

The proposal would add a note to proposed Section 6085(a) to inform the reader that Revision 6 of the U.S. Navy Diving Manual is available on the internet. The note is necessary to inform the reader how the document which is incorporated by reference may be obtained.

New Section 6085(a)(1) would be added to specifically reference the No-Decompression Limits and Repetitive Group Designation Table for No-Decompression Air Dives - Table 9-7. This proposed revision is necessary to specify the decompression table to be used to determine the no-decompression limits and the repetitive group designators for work in a compressed air environment that does not require decompression.

New Section 6085(a)(2) would be added to specifically reference the Air Decompression Table - Table 9-9. This proposed revision is necessary to specify the table that shall be used to

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<sup>1</sup> Kindwall EP, Compressed air tunneling and caisson work decompression procedures: development, problems, and solutions, Undersea and Hyperbaric Medical Society, 1997; 24(4); 337-345.

<sup>2</sup> Dysbaric osteonecrosis is a form of avascular necrosis where the death of a portion of the bone that is thought to be caused by nitrogen embolization (blockage of the blood vessels by a bubble of nitrogen coming out of solution) in divers.

determine the decompression schedules and repetitive group designators for work in a compressed air environment that requires decompression.

New Section 6085(a)(3) would be added to specifically reference the Residual Nitrogen Timetable for Repetitive Air Dives - Table 9-8. This proposed revision is necessary to specify the table that shall be used to determine the Residual Nitrogen Time for an employee who has some residual nitrogen in his/her system when beginning work in a compressed air environment.

New Section 6085(a)(4) would be added to specifically reference the Sea Level Equivalent Depth - Table 9-4. This proposed revision is necessary to specify the table that shall be used to correct the sea level decompression tables for use at altitudes of 1,000 feet above sea level and higher.

New Section 6085(a)(5) would be added to specifically reference the Repetitive Groups Associated with Initial Ascent to Altitude - Table 9-5. This proposed revision is necessary to specify the table that shall be used to adjust decompression schedules when an employee who is not fully equilibrated at altitude begins work in a compressed air environment.

New Section 6085(a)(6) would be added to specifically reference the Required Surface Interval Before Ascent to Altitude After Diving - Table 9-6. This proposed revision is necessary to specify the table that shall be used to determine when it is safe for an employee to fly or ascend to higher altitude after performing work in a compressed air environment.

New Section 6085(b), (b)(1) and (b)(2) would be added to instruct the reader how to apply the referenced U.S. Navy decompression tables to a non-diving operation, such as work in compressed air, and to specify restrictions on the use of the decompression tables. As provided in the exceptions to Section 6085, the restrictions in subsection (b)(2) regarding the use of the referenced air decompression table do not apply in an emergency or when following decompression procedures recommended by the supervising physician and approved by the Division in accordance with the conditions specified in the exceptions.

New Section 6085(b)(1) would require employers to use the decompression tables specified in Sections 6085(a)(1) to (a)(6) in accordance with the rules, instructions and examples in Chapter 9 of the referenced U.S. Navy Diving Manual that apply to the tables. It would also require employers to use applicable scientific principles when applying the diving related terms, definitions and units of measure used in Chapter 9 to a non-diving operation such as work in compressed air. The proposal would provide a conversion factor for converting FSW to psi. This proposed revision is necessary to instruct the reader how to apply the referenced U.S. Navy dive tables to a non-diving operation such as work in compressed air.

New Section 6085(b)(2)(A) would prohibit the use of Table 9-9 for pressures exceeding 50 psi(g) unless recommended by the supervising physician and approved by the Division. The proposal is consistent with amended Section 6080(b) and the recommendations of the advisory committee. This proposed revision is necessary to provide an additional measure of medical and regulatory review of decompression procedures for pressures above 50 psi which present an increased risk of decompression sickness.

New Section 6085(b)(2)(B) would prohibit the use of Table 9-9 for pressures greater than 190 FSW. The advisory committee recommended that Table 9-9 not be used for pressure exceeding 190 FSW to prevent nitrogen narcosis. This proposed revision is necessary to prevent nitrogen narcosis.

New Section 6085(b)(2)(C) would require a gas mix of air and oxygen (AIR/O<sub>2</sub>) to be used when the table indicates a gas mix of either AIR or AIR/O<sub>2</sub> may be used but recommends using a gas mix of AIR/O<sub>2</sub>. This proposed revision is necessary to provide an additional measure of safety to reduce the risk of decompression sickness.

New Section 6085(b)(2)(D) would prohibit surface decompression (decanting). This proposed revision is necessary to provide protection for employees that is at least as effective as the federal standard, CFR 1926.803(f)(3) which permits decanting only when necessary and then only after the supervising physician has established procedures for decanting.

New Section 6085(b)(2)(E) would prohibit the use of Table 9-9 for a bottom time and pressure that is designated an Exceptional Exposure in the table. The risk of decompression sickness and/or oxygen toxicity is substantially greater for Exceptional Exposure conditions than for work at lower pressures and shorter bottom times. This proposed revision is necessary to reduce the risk of decompression sickness and oxygen toxicity.

New Section 6085(b)(2)(F) would require the compression rate to be in accordance with Section 6080(a). Section 6080(a) provides a specific compression rate which is slower than the 75 feet per minute (FPM) descent rate designated in Table 9-9. The slower compression rate provides an opportunity to determine if an employee is experiencing discomfort such as middle ear pain which could lead to injury if compression proceeds at too fast a rate. This proposed revision is necessary to prevent discomfort or injury from compressing at too fast a rate and to avoid conflict between the decompression rate specified in Section 6080(a) and the descent rate designated in Table 9-9.

New Exception No. 1 to Section 6085 would exempt employers from the provisions of subsections (a) and (b)(2) in an emergency provided that employees are decompressed in accordance with decompression tables and procedures recommended by the supervising physician. Exception No. 1 to Section 6085 would permit decanting in an emergency following the recommendations of the supervising physician. In an emergency, it may be necessary to recompress employees to prevent decompression sickness, treat decompression sickness, or treat other injuries. The appropriate decompression procedures for a particular emergency may not comply with the specific requirements of Section 6085. In an emergency it may be necessary to recompress employees to prevent decompression sickness, treat decompression sickness, or treat other injuries. The appropriate decompression procedures for a particular emergency may not comply with the specific requirements of Section 6085.

The proposed exemption is necessary to allow the supervising physician to recommend appropriate decompression procedures to be followed in an emergency.

New Exception No. 2 to Section 6085 would exempt employers from having to comply with the decompression tables specified in subsection (a) or with the conditions specified in subsection (b)(2) for use of Air Decompression Table 9-9, provided the employer complies with decompression tables and procedures that have been recommended by the supervising physician in writing and approved by the Division for use at the worksite. When requested by the Division, the employer would be required to provide evidence demonstrating that the alternative tables and procedures are as effective as the U.S. Navy decompression tables referenced in this subsection.

Exception No. 2 to Section 6085 would permit decanting when conducted in accordance with decompression tables recommended by the physician and approved by the Division. The Division may require evidence that the recommended surface decompression procedures are as effective as those in Revision 6 of the referenced U.S. Navy Diving Manual.

The proposed exception is necessary because it is anticipated that some compressed air work may exceed the pressures and bottom times covered by the tables specified in subsection (a) and/or the limitations placed on their use by subsection (b)(2). For example, some tunneling operations are performed at depths that require employees to work in pressure exceeding 50 psi which is the maximum allowed by subsection (b)(2)(B).

#### **Section 6087. Decompression After Repetitive Exposures.**

Section 6087 requires that the appointed physician establish procedures for decompression for repetitive exposures and refers to the tables and instructions in Appendix B. The tables in Appendix B were adapted from U.S. Navy Diving Tables which have been superseded by Table 9-8 in Revision 6 of the U.S. Navy Diving Manual. Appendix B allows the Division to accept alternate methods of decompression for repetitive exposures provided the licensed physician submits the proposed procedure to the Division for its review and approval.

The proposal would delete Section 6087, the reference to Appendix B, and Appendix B. The proposal would address decompression for repetitive exposures in amended Section 6085(a)(3). That Section would require decompression be conducted in accordance with the Residual Nitrogen Timetable for Repetitive Air Dives - Table 9-8 which is incorporated by reference. Proposed Exemption No. 2 to Section 6085 would allow the employer to implement alternative decompression procedures that have been recommended by the supervising physician and approved by the Division. The revision is necessary because the decompression tables for repetitive exposures in Appendix B do not adequately protect employees from decompression sickness.

#### **Section 6089. Decompression by Decanting.**

Section 6089 requires that, if decanting is necessary, the appointed physician shall establish procedures for decompression; and that no more than 5 minutes shall elapse between decompression and recompression. The proposal would delete Section 6089 and add exceptions to Section 6085 discussed prior. The proposed revision is necessary to ensure that decanting is not performed except in an emergency in accordance with the supervising physician's

recommendations; or when following decompression procedures recommended by the physician in writing and approved by the Division.

### **Section 6090. Air Locks.**

Section 6090(a) prohibits an employee passing from a compressed air environment to atmospheric pressure without being decompressed in accordance with the procedures in Appendix A, Appendix B or Section 6089. The proposal would replace the reference to Appendix A, Appendix B or Section 6089 with a reference to Section 6085. This proposed revision is necessary because the decompression procedures in Appendix A, Appendix B and Section 6089 do not adequately protect employees from decompression sickness and the proposal would replace these out-dated decompression tables with the more protective tables referenced in proposed Section 6085.

### **Section 6100. Temperature, Illumination, Sanitation and Ventilation.**

Section 6100(e) provides that ventilation in the locks and chambers, with the exception of the medical chamber, shall be such that the air quality meets the requirement of Section 5144(e). Section 5144 is the Respiratory Protection standard. In 1998, Section 5144 was renumbered to Section 5147 and a new Section 5144 was adopted to be at least as effective as the new federal respiratory protection standard. Section 5147 has since been repealed. Prior to the adoption of the new Section 5144 in 1998, subsection (e) pertained to air quality. When the new standard was adopted in 1998, the provisions regarding air quality were relocated to subsection (i). The internal reference in Section 6100(e) to the air quality requirements in Section 5144 was not revised to reflect the relocation of these requirements from subsection (e) to subsection (i). The proposed amendment would change this reference from Section 5144(e) to Section 5144(i). This proposed revision is necessary to re-establish the appropriate reference to the air quality requirements for breathing air in the respiratory protection standard.

New Section 6100(i) would require that when an oxygen breathing gas system is used during decompression, the employer shall take one, or both, of the following steps to ensure that the concentration of oxygen inside the chamber or lock does not exceed twenty five percent (25%) by volume: (1) The oxygen breathing gas system shall capture the oxygen that is not consumed by the user and directly exhaust it to a well ventilated area outside of the lock or chamber; or (2) An oxygen meter shall be used to continuously monitor the oxygen concentration inside the chamber or lock. The purpose of ensuring that the oxygen concentration does not exceed 25% is to prevent creating an atmosphere that increases the fire hazard. The purpose of the revision regarding the oxygen breathing gas system is to require an overboard dump system that exhausts the occupant's expired breathing gases to prevent a build up of oxygen inside the chamber or lock. The purpose of the oxygen monitor is to immediately alert the lock or chamber attendant of an increase in the oxygen concentration above 23.5%. The proposed amendments are necessary to ensure that the use of oxygen during decompression does not increase the fire hazard.

### **Section 6115. Fire Prevention.**



New Section 6115(i) would require that equipment used with oxygen mixtures > 40% would be designed and maintained for oxygen service, be free from oil, grease and combustible materials; have slow-opening shut-off valves; and be protected from physical damage. The purpose of subsection (i)(1) is to prevent fires or other hazardous reactions that may occur from the use of equipment or materials that are incompatible with oxygen. The purpose of subsection (i)(2) is to prevent oxygen from igniting combustible materials. The purpose of subsection (i)(3) is to prevent fires caused by particle impact ignition resulting from rapidly opening a valve on a compressed oxygen cylinder. The purpose of subsection (i)(4) is to prevent fires from the accidental release of compressed oxygen. The proposed amendments are necessary to prevent the accidental release of compressed oxygen and to prevent fires or other hazardous reactions that may occur from the use of equipment or materials that are incompatible with oxygen.

### **Section 6120. Medical Control.**

Section 6120(a)(1) requires that the employer retain 1 or more physicians licensed in the State of California familiar with and experienced in the physical requirements for the medical aspects of compressed air work. The proposal would keep the requirement for the employer to retain a physician and replace the text which specifies the qualifications of the physician with the term “supervising physician.” The proposal would add a new definition in Section 6074(b) for “supervising physician” which would be defined as a physician licensed in the State of California who is familiar with and experienced in the physical requirements for the medical aspects of work in compressed air environments.

Section 6120(a)(3) which requires that an oxygen tolerance test shall be passed by all persons engaged in compressed air work is proposed for deletion. This proposed revision is necessary because the advisory committee considered this requirement to be unreliable. Subsections (a)(4) and (a)(5) would be renumbered to subsections (a)(3) and (a)(4) to maintain the sequential number of the subsections.

Section 6120(b)(13) requires that the medical chamber shall be in constant charge of an attendant under the direct control of the retained physician. The proposal would replace the term “retained physician” with the term “supervising physician.” The proposed revision is necessary for clarity and consistency.

Appendix A contains Decompression Tables No. 1 and No. 2 and an explanation of the tables. The proposal would delete Appendix A in its entirety and instead rely on the tables and instructions incorporated by reference in Section 6085. This proposed revision is necessary because the decompression tables in Appendix A do not provide adequate protection against decompression sickness and the U.S. Navy decompression tables on which they are based have been superseded by the updated U.S. Navy decompression tables in Chapter 9 of the U.S. Navy Diving Manual - Revision 6, which is incorporated by reference.

Appendix B contains Decompression Tables No. 3, No. 4 and No. 5 and an explanation of the tables which are used for repetitive exposure to compressed air environments. The proposal would delete Appendix B in its entirety and instead rely on the tables and instructions incorporated by reference in Section 6085. This proposed revision is necessary because the

decompression tables in Appendix B do not provide adequate protection against decompression sickness and the U.S. Navy decompression tables on which they are based have been superseded by the updated U.S. Navy decompression tables in Chapter 9 of the U.S. Navy Diving Manual - Revision 6, which is incorporated by reference.

### **DOCUMENTS RELIED UPON**

1. *Safe Decompression Schedules for Caisson Workers*, December 1, 1983, National Technical Information Service, PB85103612.
2. *Compressed Air Tunneling and Caisson Work Decompression Procedures: Development, Problems, and Solutions*, Kindwall, E.P., Undersea and Hyperbaric Medical Society, Inc., 1997.
3. *Hyperbaric Health and Safety*, Tunnels and Tunneling International, May 2007.
4. *Procédures D'intervention en Air Comprime sans Immersion Effectuées dans le Cadre de la Mention D*, Annexe V, Travaux en Milieu Hyperbare, pg. 375-396.
5. Correspondence from Dr. E.P. Kindwall to Dr. Edward T. Flynn via Jack Bartlett, Dive Safety Consulting, Inc., December 17, 2004, English translation of *Procédures D'intervention en Air Comprime sans Immersion Effectuées dans le Cadre de la Mention D*, Annexe V, Travaux en Milieu Hyperbare.
6. Correspondence from Dr. Edward T. Flynn to Jean-Claude Le Pechon, December 15, 2004, regarding "The French Decompression Tables."
7. Correspondence from Jean-Claude Le Pechon to Dr. Edward Flynn, December 17, 2004, regarding "The French Decompression Tables."
8. *Decompression Procedures in Compressed Air – Is There a Specific Physiology?*, Jean-Claude Le Pechon, Abstract, April 2, 2004.
9. *Compressed Air Work – French Tables 1992 – Operational Results*, Le Pechon, Jean-Claude, JCLP Hyperbarie Paris.
10. *Saturation Diving for Tunneling Operations*, Le Pechon, Jean-Claude, et al, JCLP Hyperbarie, Paris, France.
11. *Successful Use of Oxygen Decompression in Compressed Air Caisson Work*, Eric P. Kindwall, M.D. and Dana Brock, P.E., C.E.G., Unpublished.
12. E-mail from Dr. Edward T. Flynn to Tom Mitchell, June 18, 2008, regarding Associated Tables.
13. *Trials of a Blackpool Table Decompression with Oxygen as the Breathing Gas*, Flook, Valerie, PhD., Health and Safety Executive, ISBN 0 7176 2102 2, 2001.
14. E-mail from Dr. Edward T. Flynn to Tom Mitchell, June 27 and 30, 2008, regarding a comparison of the "French Tunneling Tables" to the new U.S. Navy Air/Oxygen Tables.

These documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

### **DOCUMENTS INCORPORATED BY REFERENCE**

- Volume 2, Chapter 9, Air Decompression, U.S. Navy Diving Manual, Revision 6, April 15, 2008.

This document is too cumbersome or impractical to publish in Title 8. Therefore, it is proposed to incorporate the document by reference. Copies of this document are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

### **REASONABLE ALTERNATIVES THAT WOULD LESSEN ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES**

No reasonable alternatives were identified by the Board and no reasonable alternatives identified by the Board or otherwise brought to its attention would lessen the impact on small businesses.

### **SPECIFIC TECHNOLOGY OR EQUIPMENT**

This proposal will not mandate the use of specific technologies or equipment.

### **COST ESTIMATES OF PROPOSED ACTION**

#### **Costs or Savings to State Agencies**

No costs or savings to state agencies will result as a consequence of the proposed action.

#### **Impact on Housing Costs**

The Board has made an initial determination that this proposal will not significantly affect housing costs.

#### **Impact on Businesses**

The Board has made a determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. The cost impact of the proposal on business was considered at the June 30, 2008, advisory committee meeting and the committee agreed that any potential increase in cost would be off set by savings. Mr. Kevan Corson said that there may be costs associated with the safety equipment and procedures required when oxygen is used for decompression; however there would be cost savings from using oxygen because it would reduce decompression time. Reducing the decompression time could eliminate the need for a special decompression chamber which is required when the total decompression time exceeds 75 minutes. Dr. Van Hoesen said that costs associated with the hyperbaric treatment of employees for decompression sickness would be reduced because the revised decompression tables will result in fewer cases. She noted that these savings could be substantial.

#### **Cost Impact on Private Persons or Businesses**

The Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

### **Costs or Savings in Federal Funding to the State**

The proposal will not result in costs or savings in federal funding to the state.

### **Costs or Savings to Local Agencies or School Districts Required to be Reimbursed**

No costs to local agencies or school districts are required to be reimbursed. See explanation under "Determination of Mandate."

### **Other Nondiscretionary Costs or Savings Imposed on Local Agencies**

This proposal does not impose nondiscretionary costs or savings on local agencies.

## **DETERMINATION OF MANDATE**

The Occupational Safety and Health Standards Board has determined that the proposed standards do not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendments will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, these standards do not constitute a "new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution."

The California Supreme Court has established that a "program" within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

These proposed standards do not require local agencies to carry out the governmental function of providing services to the public. Rather, the standards require local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, these proposed standards do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

These proposed standards do not impose unique requirements on local governments. All employers - state, local and private - will be required to comply with the prescribed standards. Local agencies will be required to comply with the proposal and thereby incur some costs. These costs may be required to be reimbursed by the state pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code.

### **EFFECT ON SMALL BUSINESSES**

The Board has determined that the proposed amendments may affect small businesses. However, no economic impact is anticipated.

### **ASSESSMENT**

The adoption of the proposed amendments to these standards will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

### **ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS**

No reasonable alternatives have been identified by the Board or have otherwise been identified and brought to its attention that would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.